

WELCON

Circle Servo Drive

Hardware Manual



WEC-D048/10-FS002D-EC

welcon
SYSTEMS



Precautions

- Please read this manual carefully before installing and commissioning.
- WELCON SYSTEMS assumes no responsibility whatsoever for any loss or damage arising out of use for any purpose.

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Product Code for welcon Drive

WER-D024/05-FSxxxx-E

Product Type

WE WELCON Standard
****** User Code (only for customized order)

Drive Shape

R Rectangle Type Board
C Circle Type Board
M Miniature Board

Power

D DC
A AC

Voltage

024 24V(DC)
048 48V(DC)
220 220V(AC)

Current

01 1Arms (Constant, Peak 3Arms)
03 3Arms (Constant, Peak 6Arms)
05 5Arms (Constant, Peak 10Arms)
10 10Arms (Constant, Peak 20Arms)

Feedback Sensor (bit operation)

Bit0	Incremental Encoder	Bit4	Sin/Cos Encoder	Bit8	Potentiometer
Bit1	Dual Incremental Encoder	Bit5	BISS/SSI Interface Encoder	Bit9	Reserved
Bit2	Separated Digital Hall Sensor	Bit6	Analog Hall Sensor	Bit10	
Bit3	Shared Digital Hall Sensor	Bit7	Tamagawa Serial Encoder	Bit15	

Ex) Incremental Encoder + Shared Digital Hall Sensor + Analog Hall Sensor = 0000 0000 0100 1001 = 0049

Communication

E EtherCAT
C CAN

Document no. WEC-D048/10-FS002D-EC

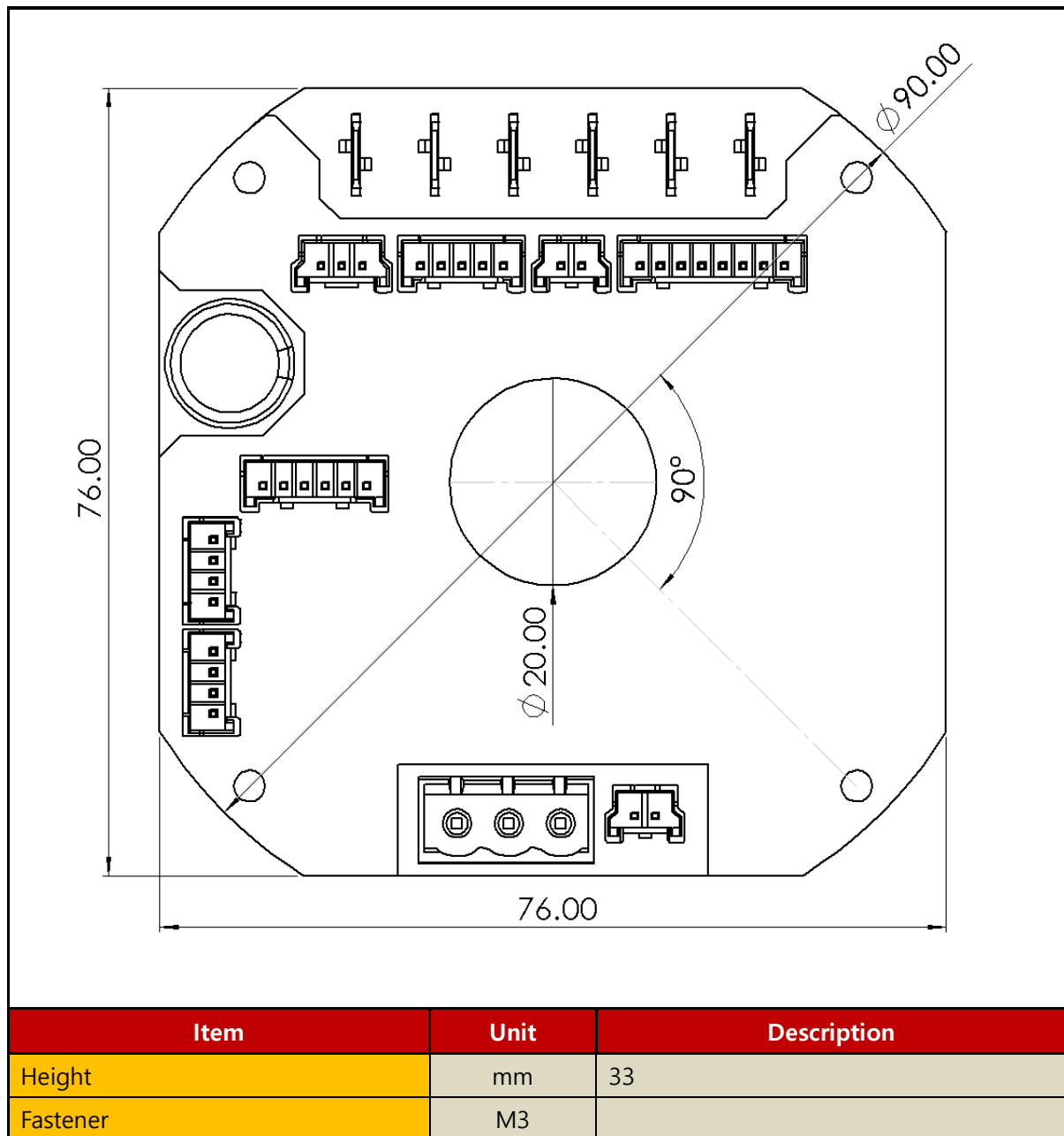
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Question : www.welconsystems.com

1. Technical Information

1.1. Mechanical Data



[*For details, please refer to the 3D Modelling on the homepage.](#)

1.2. Electrical Data

WEC-D048/10-FS002D-EC			
Basic	Motors	DC/BLDC/PMSM/VCM	
	Communication	CANopen + EtherCAT(CoE)	
	GUI	WELSS, Setting, Drive, Motor, Feedback, I/O, Motion	
	Position Sensor	Incremental Encoder Shared/Separated Hall sensor SSI/Biss-C Serial Encoder	
Inputs & Outputs	Analog Input	Quantity	1
		Voltage Range	Analog ± 10 VDC differential
		Input Resolution	12 bit
Motor Feedback	General	Supply Voltage	5VDC
	Incremental Encoder	Signal	A-quadr-B with or without index, shared digital hall sensor, RS422, Differential
		A-quadr-B Max Input Frequency	10MHz (before quadrature)
	Digital Hall Sensor	Signal	Differential-ended
		Type	Separated and shared hall sensor
	Serial Encoder	Type	SSI, Biss-C
		Bit rate	0.5Mbps, 1Mbps, 2Mbps, 2.5Mbps, 5Mbps

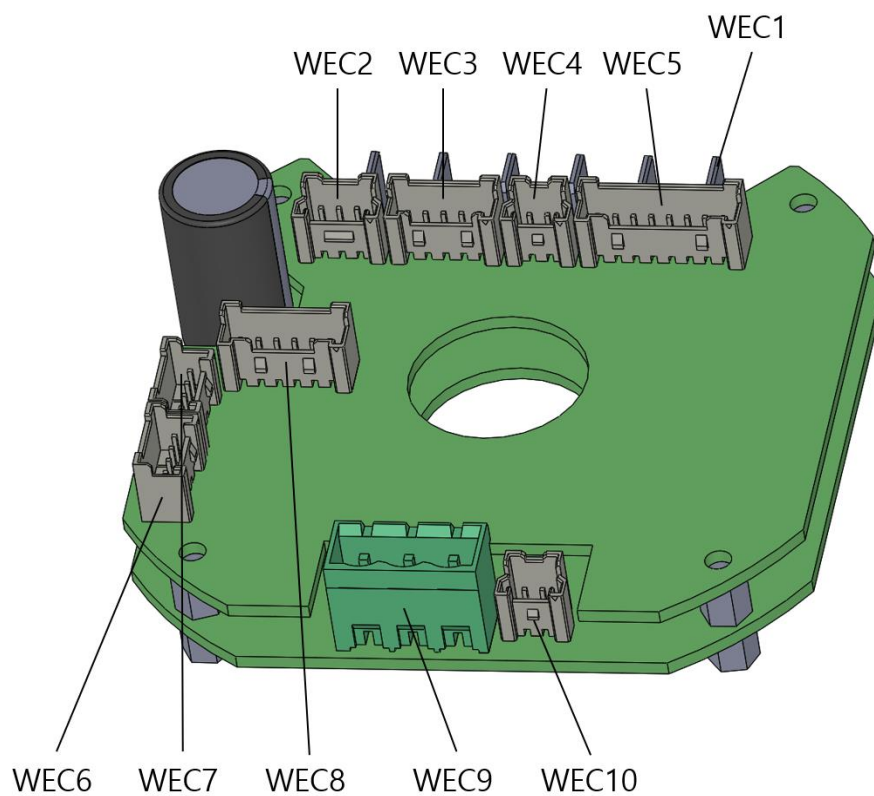
[*For details, please refer to the specification on the homepage.](#)

2. Wiring

2.1. Tools

Tool	Manufacturer	Part Number
Hand crimp Tool	MOLEX	638190500

2.2. Connections



WEC1 → Main Power

WEC2 → CAN

WEC3 → HALL Sensor

WEC4 → Analog Input

WEC5 → Digital Encoder

WEC6 → EtherCAT IN

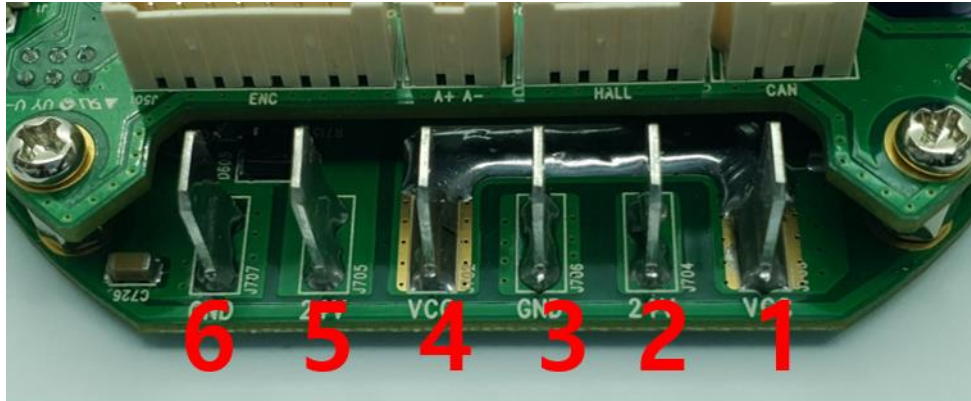
WEC7 → EtherCAT OUT

WEC8 → Serial Encoder

WEC9 → UVW

WEC10 → Brake

2.3. Main Power



A100452CT-ND		J701~706
Pin	Signal	Input Power
1, 4	Motor Power	VCC 12V~ 48V DC
2, 5	Drive Power	*24V
3, 6	GND	GND

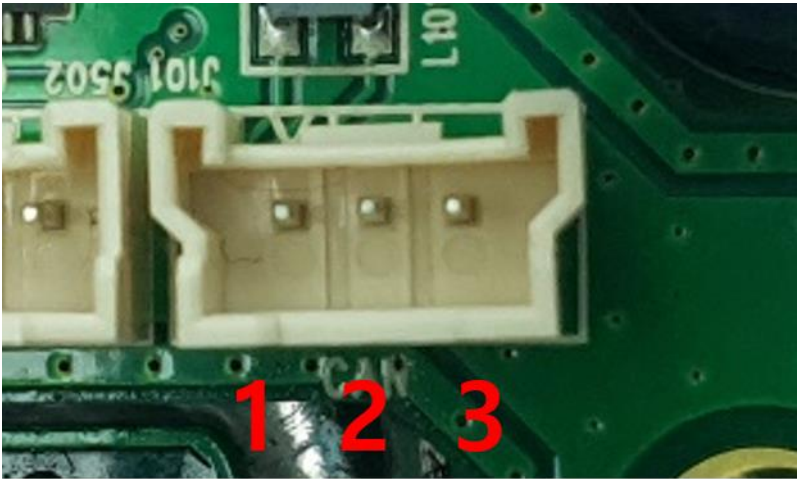
* Over voltage Caution (Only 24V)

2.4. EtherCAT IN/OUT



MOLEX_35362-0450		J301, J401
Pin	Signal	
ECAT IN		
1	EtherCAT_RX0-	
2	EtherCAT_RX0+	
3	EtherCAT_TX0-	
4	EtherCAT_TX0+	
ECAT OUT		
1	EtherCAT_RX1-	
2	EtherCAT_RX1+	
3	EtherCAT_TX1-	
4	EtherCAT_TX1+	

2.5. CAN



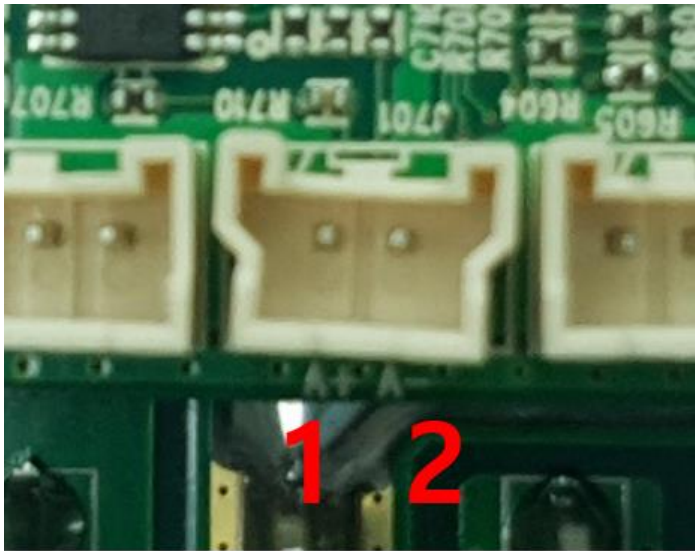
MOLEX_35507_0300



502128000

MOLEX_35362-0350		J101
Pin	Signal	
1	CAN H	
2	CAH L	
3	GND	

2.6. Analog Input



MOLEX_35507_0200



502128000

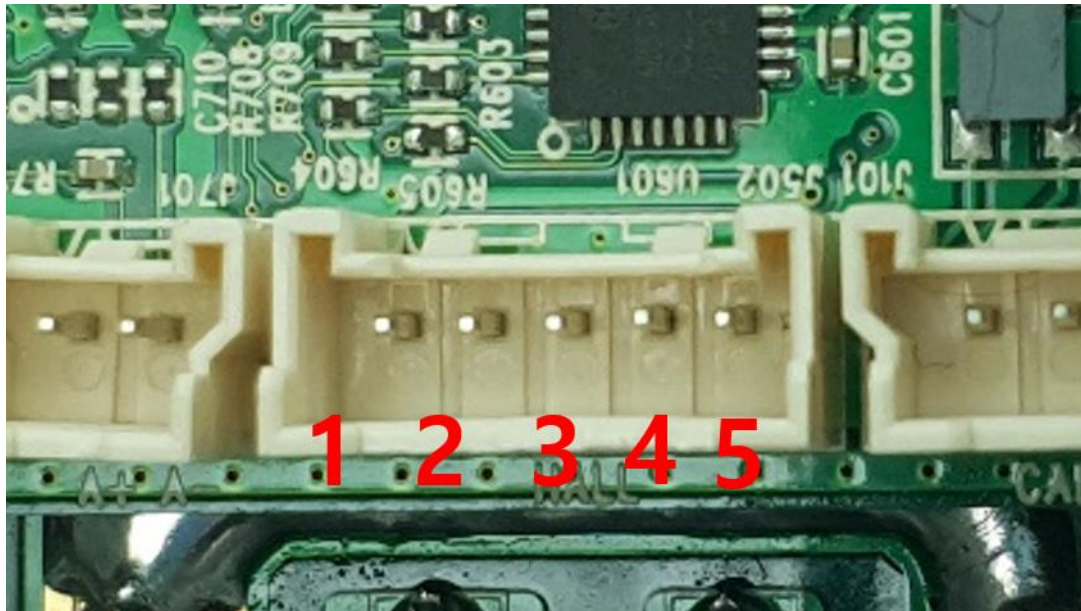
MOLEX_35362-0250		J701
Pin	Signal	
1	AIN0+	
2	AIN0-	

2.7. Digital Encoder



MOLEX_35362-0850		J501
Pin	Signal	
1	5V	
2	GND	
3	ENC_A	
4	ENC_/A	
5	ENC_B	
6	ENC_/B	
7	ENC_I	
8	ENC_/I	

2.8. HALL



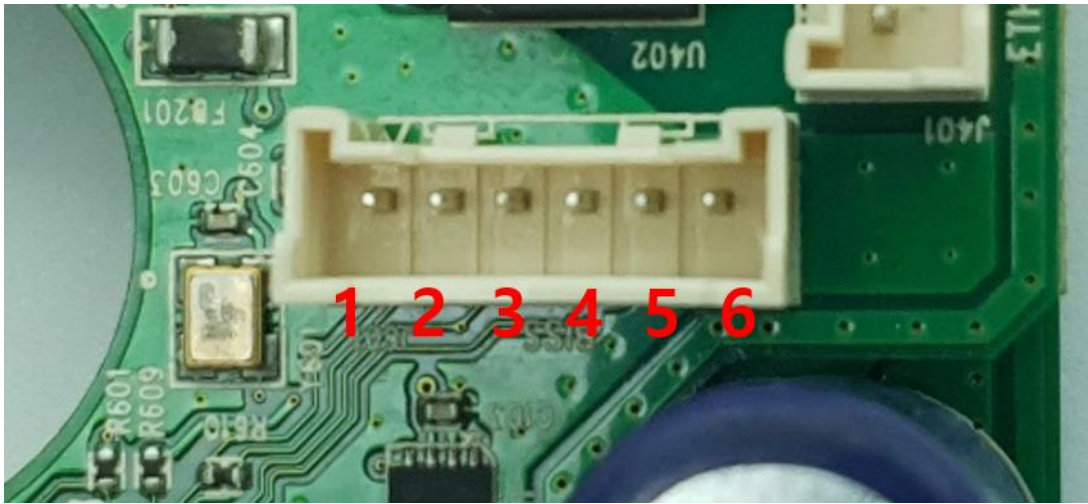
MOLEX_35507_0500



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MOLEX_35362-0550		J502
Pin	Signal	
1	5V	
2	GND	
3	U	
4	V	
5	W	

2.9. Serial Encoder



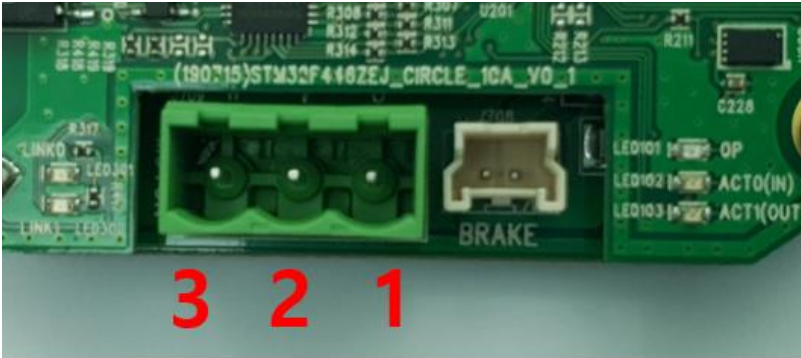
MOLEX_35507_0600



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MOLEX_35362-0650		J601
Pin	Signal	
1	5V	
2	GND	
3	BISS DATA+ / SSI SLO+	
4	BISS DATA- / SSI SLO-	
5	BISS CLK+ / SSI MA+	
6	BISS CLK- / SSI MA+	

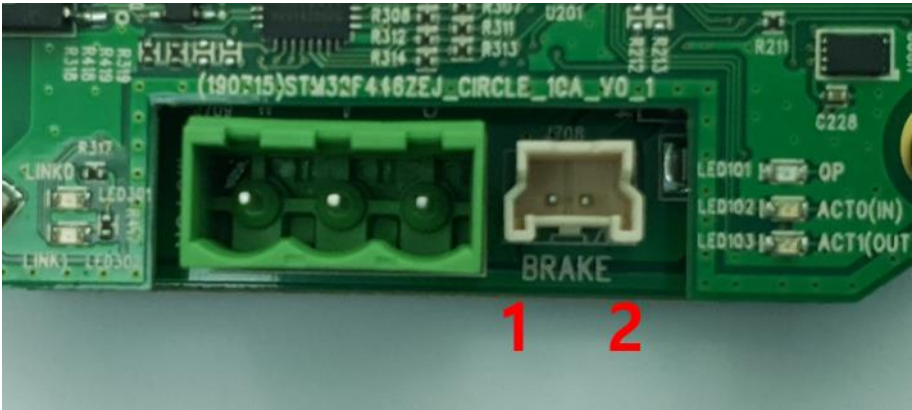
2.10. UVW



5ESDV-03P

5EHDVC_3P		J101
Pin	Signal	
1	U	
2	V	
3	W	

2.11. BRAKE



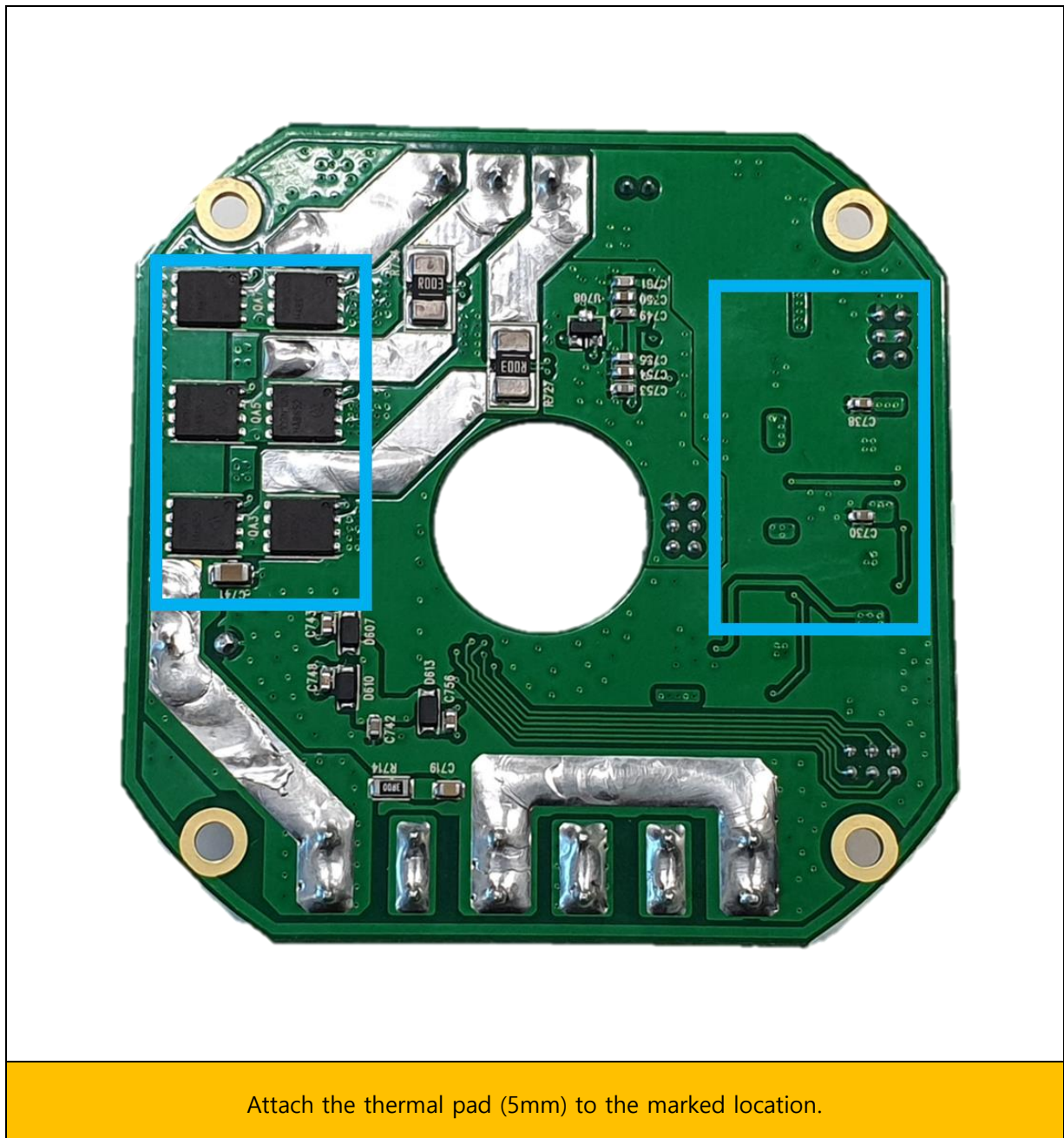
MOLEX_35507_0200



502128000

MOLEX_35362-0260		J7
Pin	Signal	
1	24V	
2	GND	

2.12. Heatsink



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